Greater Prairie Chicken

(*Tympanuchus cupido*)

Description

European settlers named this native grouse "prairie chicken" to reflect its habitat and its size, which is similar to that of a small domestic chicken. Adults are about 18 inches tall and weigh approximately 2 pounds. They also are called pinnated grouse because of the long pinnae or tuft of feathers on the side of the neck. The pinnae are longer in males. Orange-colored air sacs and eyebrows are conspicuous on males in the spring. Prairie chickens were once abundant on native prairies from Massachusetts to Colorado, and from the Gulf Coast of Texas to Minnesota.

Importance

The prairie chicken was once a prized game bird in Missouri, but population declines brought closure to hunting seasons in 1906. Its colorful habits, however, keep it popular among wildlife enthusiasts. Prairie chickens require a diversity of grassland types throughout extensive landscapes. Consequently, managing for them also helps a wide variety of other grassland species once common across a third of Missouri.

Distribution and Abundance

In the 1800s, hundreds of thousands of prairie chickens ranged across 18,500 square miles of Missouri grasslands. As late as the early 1940s, 15,000 lived within 2,500 square miles of suitable habitat. Since the early 1950s, the range has shrunk to less than 100 square miles. More than 99 percent of the original native prairie has been converted to agricultural uses which do not meet habitat requirements.

Fewer than 500 birds remain in isolated populations in southwest, northwest and north-central Missouri. Without substantial increases in nesting, brood-rearing and winter-roosting habitat, the few remaining birds will not survive. At the current rate of decline, the species likely will be extirpated from the state by 2010.

Habitat and Home

Although most of Missouri's remaining prairie chickens live on native prairies, these birds also do well in properly managed non-native grasslands. The structure of available vegetation in a field seems more important than the grass species itself. Prairie chickens require wide open sweeps of permanent grassland. They spend most of their lives within several hundred acres, but are known to move as far as 23 miles to search for other birds or suitable nesting sites.

The most stable populations occur in relatively treeless grasslands of at least several square miles. Small islands of low native shrubs such as blackberry, dogwood, wild plums and sumac provide important cover from mid-summer heat. Prairie chickens also use moderately grazed native prairies and planted native grasses or ungrazed fields of cool-season grasses for nesting and winter roosting. They use slightly weedier pastures, idled crop fields and alfalfa for brood rearing. They rarely use heavily grazed cool-season grasses except for courtship. Prairie chickens also avoid idle native grasses that are too tall and dense.

Trees, which break up the open landscape that is critical for prairie chickens and other grassland birds, also provide habitat for predators. Although prairie chickens sometimes land in trees, and even eat tree buds when ice covers other foods, numerous studies confirm that their survival is far better where trees are absent throughout very large areas.

Feeding Habits

Feeding usually takes place in early morning and late afternoon. Midday is normally the time for loafing. Important foods include insects, forb seeds and greens, as well as some grains. Studies indicate that broods use legume hayfields, soybean fields and weedy pastures heavily during summer.

Reproduction

Breeding season begins in March and extends through May. Cocks make early morning and late afternoon vis-

its to areas called booming grounds or leks. The leks are often traditional sites used for many years. However, the birds may move the location of the lek over time to be near nesting cover. Males dance, call and fight among themselves as they establish dominance. Hens visit the lek and select the most fit mate; mating occurs on the lek during April.

Nests—simple, bowl-shaped structures of dead grasses—are about 7 inches in diameter and 2 to 3 inches deep. They usually are located in high, arching clumps of grass, but are sometimes built in weedy areas. Incubation averages 23 to 25 days, with the average clutch containing 12 to 13 eggs. Only a little smaller than domestic chicken eggs, they are dark olive-buff to grayish-olive with fine spots and occasional red-brown flecks. The peak of hatching is the last week of May and first week of June.

Chicks remain with the hen for eight to 10 weeks before the brood breaks up. Brood survival is often very low, and reasons aren't clear because broods are difficult to study. However, the scarcity of grasslands that provide the right mix of insects and protection from predators may be part of the problem. In Missouri, chicks spend a significant amount of time feeding in standing soybeans.

Managing Your Land for Prairie Chickens

A minimum of 4,000 to 5,000 acres of open grassland is believed necessary to support a stable population. As a result, several well-managed farms are normally required to provide adequate acreage for a self-sustaining flock.

Permanent grass tracts of 160 acres or larger are best, but these may be managed in 10 to 40-acre parcels. Management that leaves grasses standing 10 to 17 inches tall from September through June is critical for winter roosting and nesting. The grasses also should be sturdy enough to withstand strong winds and heavy precipitation. Light grazing during nesting is acceptable. Very light grazing can improve cool-season grasses and create value for nesting and brood rearing. At least 50 percent of the landscape should provide nesting habitat to sustain the population. Burns help keep litter from becoming too thick, but no more than one-third of the total area managed for nesting should be burned in any given year.

Hens occasionally move newly hatched broods considerable distances to reach areas with abundant forbs—particularly to legumes more than 25 inches tall, which provide both a protective canopy and harbor abundant insects. Significant bare ground allows easy movement and open space to dry off from overnight dew. Management aimed at providing nesting sites near suitable brooding habitat helps reduce travel by young chicks and may increase survival.

Woody cover is not important for prairie chickens in winter. However, broods do use low-growing (3- to 10-foot) shrubs to escape summer heat. These shrub clumps should comprise only 1 to 5 percent of the landscape. Trees should be kept to a minimum and confined to riparian (or the lowest) areas in the landscape.

Pastures

Management of fescue pastures usually involves close grazing that eliminates nesting cover. As a result, fescue offers little habitat of value to prairie chickens. Tall fescue can serve as nesting habitat if it is left idle. However, idle fescue tends to form a monoculture with few insects, making it poor brood habitat. Prairie chickens may use fescue pastures to dry off after rains or heavy dew, but these must be near taller cover that provides some protection from predators.

Native warm-season grass or native prairie remnants provide excellent summer forage for livestock. Burning a different one-fourth to one-third of native grass pastures each spring will focus livestock grazing on the burned portion. This seems to produce competitive livestock gains and both nesting and brood-rearing habitat.

Hayfields

Cool-season hayfields with combinations of timothy, orchard grass, clovers and alfalfa often are used for nesting. Because cutting may occur before most nests hatch in early June, cool-season hayfields may become nesting "traps." Delaying hay harvest until mid-June will avoid most, but not all, nests. Adults and broods use hayfields for feeding following hay harvest; adults make use of legumes and chicks forage for insects.

Native prairie hayfields also provide brood habitat. However, annual haying does not leave enough cover to provide nesting habitat the following spring. Haying prairie remnants every other year can improve hay yields and provide nesting cover for prairie chickens half the time.

Idle Lands

CRP fields and other grasslands not used for agricultural production offer opportunities for prairie chicken management. If planted to native warm-season grasses, a portion of these idle fields must be disturbed each year by mowing, burning or disking to prevent the grasses from becoming too tall and thick. Some non-native cool-season grasses such as timothy, smooth brome and orchard grass mixtures provide suitable habitat and require less frequent disturbance.

However, any idle grass cover has the potential to become too tall and dense in Missouri. Nesting prairie chickens may avoid grasses taller than 30 inches. To improve these grasses for the birds, rotary mow in September to a height of 14 inches. Moderate grazing also can help diversify the structure of these otherwise rank stands of idle grass.

Want to Learn More?

Log on to www.mdc.mo.gov/landown/wild/pchicken/farming/ to learn more about managing for prairie chickens and other grassland wildlife in Missouri. Because prairie chickens have strict habitat requirements across vast areas, the Missouri Department of Conservation (MDC) seeks opportunities to work with private landowners in landscapes occupied by this species. Financial assistance is available and participation is always voluntary. To learn more, please contact your local MDC office; visit www.mdc.mo.gov/about/srvcentr.htm to discover the location nearest you.

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